

### INFERIORITY OF MODERN ENGLISH BRICKWORK.

It is a remarkable fact, that in proportion as the manufacture and burning of bricks have improved, and while the use of stone-lime has become more general, the workmanship of much of our modern English brickwork has debased in quality more than the materials of the work have improved. The author is obliged to confess, that although he has taken very great pains to procure complete soundness in the execution of brickwork, he has almost wholly failed; his idea of soundness is nothing more than that the work should be composed of good materials correctly bonded in every part, should be thoroughly cemented together, and that as few broken bricks as possible should be used in the work.

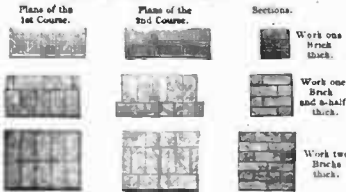
An idea is prevalent that great care and exactness in the choice of the materials of brickwork, and in the workmanship of it, are too burthenously expensive to be borne in ordinary buildings. No idea could be more erroneous, for bad materials will not support more than their own weight; and though bad brickwork may even cost only 10l. per rod, a much larger bulk of it is required for supporting the same weight, and for keeping out the weather equally well, than for the same purpose would be required of brickwork of a better quality; while the carriage and the excessive duty are so costly, and the mortar and workmanship of it are as expensive and sometimes more so.

It will be found that for the performance of a certain quantity of duty, malm paving-bricks set in the best stone-lime mortar, will (besides their superior duration) be cheaper than the worst descriptions of place-bricks. It is useless to plead that of itself, circumstances apart, such a wall is too thick or too thin; for sufficiency of substance depends entirely upon the

purpose for which work is required. If he who built Salisbury spire found out the art of so disposing the materials of it as to make a thickness of 7 inches of stone last 500 years and still to remain, it is in vain to say that a wall 9 inches thick will not serve for such or such a purpose; the masonry of Gothic edifices is but rarely in its particles so sound as excellent brickwork; and yet frequently, though you cannot get a builder to double the strength of his walls by careful workmanship, he very often advises you to double the thickness of them in situations where weight and bulk are positive evils.

When you deduct from brickwork in ordinary buildings the loss of strength occasioned by badness of material, by disconnection of the bond, by small pieces being inserted where whole bricks should have been used, and by the weakness which is the result of the work not being duly cemented, you will find that the useful part of common work (if indeed it possesses any such) executed at 10l. per rod, really costs 50l. or more per rod; and then when it is considered in a vast number of our erections, that from one pier not being set over another, a large portion of such piers, instead of supporting the superincumbent weight, acts as ruinous burthens upon the remaining parts of the pier, it will be found that the quantity of effective brickwork is often reduced, as to cost more than 100l. per rod; and indeed it is almost a mistake to say that any of it is effective while in jeopardy from defective nature and mal-construction. In this view of the subject, brickwork is somewhat different from timber-work; for the nice calculator of interest is frequently satisfied, provided he can save by the use of low-priced and bad timber present outlay more than enough to counterbalance the expense of subsequent repairs, and perhaps he may on some special occasions be right, though, nationally considered, the use of bad timber is a disgrace.

#### English Bond of Brickwork.



It is universally admitted that English-bond is the mode in which brickwork can be put together with the greatest strength,—for in no part of such work, when properly done, does not come over joint, and it does not require small pieces of brick to fill up the work; moreover it may and ought to be done entirely with whole bricks, except the "closers" near its angles, requisite in order to adjust properly the bond. Whereas Flemish-bond requires of necessity, through its whole structure, a multitude of small pieces, and possesses the additional inconvenience of having throughout its structure a series of coffers (filled with un-bonded work) which extend perpendicularly from the base to the summit of the work.

#### Flemish Bond of Brickwork.



It is customary to consider Flemish-bond as indispensable for the external facing of even the most common descriptions of buildings; hence there is license given for the most defective workmanship; for as in general bricklayers see for all work out of sight the English-bond,

#### Brickwork Faced with Malm Stocks.



the facings can be tied into the work; and when it is considered how many of the "headers" break off while the workman is

laying them, how many he omits from carelessness or fraud, and how many of them are short when used, it will be found that only about

4th part of the superficial extent of the work is bonded,—and in common bad ordinary work, the loss may be reduced to 1/4th; and the author has seen work in which it was reduced to less than 1/4th of the superficial extent, and acted rather as a burthen than a support to the brickwork. But if a wall be built wholly of malm paving-bricks, the facing, if the work be in Flemish-bond, will have 1/3rd of its superficial extent bonded in, and if of English-bond, 1/2 of its superficial extent will be bonded.

By the ordinary mode of bonding in only the "headers" of each alternate course, two-thirds of the extent of facing throughout the work are separated from the back-work by a series of perpendicular joints extending from the base to the summit of the work. See section from c to d.



The author believes that if the favour in which Flemish-bond facings are held be altogether a prejudice, the superior soundness of facings of English-bond ought to prevent the use of Flemish-bond in most cases where it is now adopted.

It is of the greatest importance to reduce brickwork to the smallest possible dimensions; for besides the saving of the carriage and duty of the materials, the foundation is thereby disburthened of a crushing heap. In many parts of structure their grace and convenience depend solely upon the ability to reduce the bulk of their substantial component parts; and, moreover, every proprietor has a natural inherent feeling against the occupation of the site of his habitation, by an useless bulk of materials; and the disparity in favour of the quantity of permanent strength to be produced out of a given sum of money, by the use of good materials and good workmanship, should for ever, with the wise and truly economical, banish inferiority. The wonder with which mankind in general view a small quantity of materials reared by delicate art, should be sufficient inducement for the architectural practitioner to take some pains in this respect.

The author has sometimes, under peculiar circumstances, run up to a considerable height walls in their principal parts no thicker than nine inches, and has been cautioned against this; but he has found, although he could not get the brickwork executed to his satisfaction, these walls, from even the moderate care which has been used in their formation, have remained without flaw, while walls much thicker, raised by those who gave him their advice, have in a few months cracked and fallen to ruin, because they were worse constructed, and were reared contrary to all static principle.

Of how much importance it is to reduce the bulk of the component materials of an edifice to the smallest bulk which safety will allow, is the circumstance of the fondness with which so many persons view the adoption of small coarse and proportionless pillars of iron, in preference to the most beautiful piers and columns of either Grecian or even Pointed Architecture.

Only practically convince the public that economical soundness, internal capacity, and duration, may be obtained by the proper use of proper materials, and the coarse and slowly workman will in vain attempt to defraud his employer by the sale of large quantities of worthless materials,—the brick-maker will find a mode of protecting his goods, while crude, from the injuries of inclement weather, and he will so well burn his bricks, that no more soft ones will be in the market than can be used for mere purposes of bulk and weight, or for the repairs of old and inferior buildings, the great duration of which is of little consequence.

The author is the more earnest in these remarks, since he finds it difficult to disabuse one class of employers from the ill advice which they receive from inferior tradesmen, who, unable to perform any thing well, find more pecuniary profit result from the sale of a large quantity of bad materials and bad workmanship, than from the performance of a moderate quantity of excellent work.